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SEGOND SERIES, NO. 81.

BULLETIN

OF THE

Agricultural Experiment Station

OF THE

Louisiana State University and A. & M. College.

W. R. DODSON, A. B., B. S., Director.

Results of Experiments in Production and Marketing Fruits and Vegetables, and Canning Fruits and Vegetables on a Small Scale, at the

North Louisiana Experiment Station, Calhoun, La.,

BY

D. N. BARROW, B. S., Assistant Director in Charge, and
E. J. WATSON, Horticulturist.

Issued by the State Board of Agriculture and Immigration.

J. G. LEE, COMMISSIONER.

BATON ROUGE:
THE TIMES, OFFICIAL JOURNAL OF LOUISIANA.
1905.

LOUISIANA STATE UNIVERSITY

AND A. & M. COLLEGE.

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PRODUCING AND MARKETING TRUCK.

D. N. Barrow, Assistant Director.

For the past two years there has been a gradual increase in the interest given to truck and fruit growing along the railroad lines of the North Louisiana hill section. This feeling of interest was given fresh impetus by the Truck Institutes held under the auspices of the State Board of Agriculture and Immigration during January of the present year. While the station has done considerable work with fruits and vegetables for a number of years in the way of testing varieties, fertilizers, etc., no effort has been made heretofore to obtain actual cash results. Our experiments have been on a very small scale and shipments were impossible. This season with a view of obtaining commercial results and also of encouraging the local farmers to engage in the shipping of fruits and vegetables, larger areas of the most approved varieties of vegetables were planted, and in cooperation with farmers of the neighborhood carload shipments were made. The results obtained have been most encouraging and the truck movement will go forward on a much larger scale. Not only is this true in regard to the immediate neighborhood, but from all sections from which shipments were made, notably Ruston and Haynesville.

These communities are increasing their acreage and quite a number of new points are preparing to grow truck the coming season. For specific information in regard to varieties of plants grown, yield and prices, the reader is referred to the subjoined report of Mr. E. J. Watson, the horticulturist.

But many of the most important lessons in making a success of fruits and vegetables are not learned from a study of yields and prices. So important a factor toward the success are these lessons that the story would be but half told did we content ourselves with merely publishing these tables, and the attention of the would-be trucker is called to the following points:

EARLINESS.

The first factor to bear in mind is that in order to make a

success your product must mature early and be placed upon the market of the more Northern centers before those sections can produce home supply. To obtain this end no pains or trouble should be spared, and all the knowledge and skill of the trained horticulturist should be brought to bear upon it. The hot-bed and cold-frame are indispensable for this purpose, with such plants as will bear transplanting and are too delicate to risk the chance of frost. Many of those contemplating the growing of truck the coming season are not familiar with their construction and directions are here given:

THE HOT-BED.

First: What is a hot-bed, and what is its object? A hot-bed is nothing more than an enclosed seed-bed provided with a cover to retain heat and protect the plants from cold, and supplied with artificial heat to start the plants and make them grow therein while the outside temperature is too low to produce growth.

Select for the location of the hot-bed a southern exposure if possible. If this place can be to the south of a building, fence, or other windbreak, so much the better. Dig a pit five feet wide, two feet deep, and as long as desired (ten feet will grow enough plants for an acre), letting the pit run east and west, and throwing all the dirt to the north side. Now drive stakes (2x4 are heavy enough) in the corners and every five feet close to the sides of the pit. These stakes should project three feet above the natural surface of the ground on the north side, and one foot on the south. To these stakes nail 1x12 plank, boxing the bed up to their top as close as possible, and letting the ends slope down from three feet above the ground on the north, to one foot on the south. Provide shed rafters (1x4) for every three feet of length, to hold up the cover. Now bank the dirt, removed from the pit, well up against the north side and the two ends. Your bed is now ready to be filled. For the production of artificial heat in a hot-bed, there is nothing better than fresh stable manure. Horse manure is preferable, but in the absence of this, any fresh manure, being careful not to have it too "long," will do. As a final resort, cotton seed may be used. Fill twenty inches of the pit with this manure. Put it

in in thin layers, wetting it thoroughly and packing it tight with the feet and a rammer of some kind. On top of this place six to eight inches of rich loam. For a cover, glass is preferable, but common white domestic, sewn into a sheet large enough to cover the bed well, will answer all purposes in this climate. Tack this to the boxing on the north side, and to a pole the length of the hot-bed on the south side, so it can be rolled out of the way. In a few days the heat of the manure will have raised the temperature of the soil sufficiently to plant. Have the surface of the bed fine and smooth, and plant the seed in drills about four inches apart and running north and south. Cover lightly, press down firmly, and water moderately.

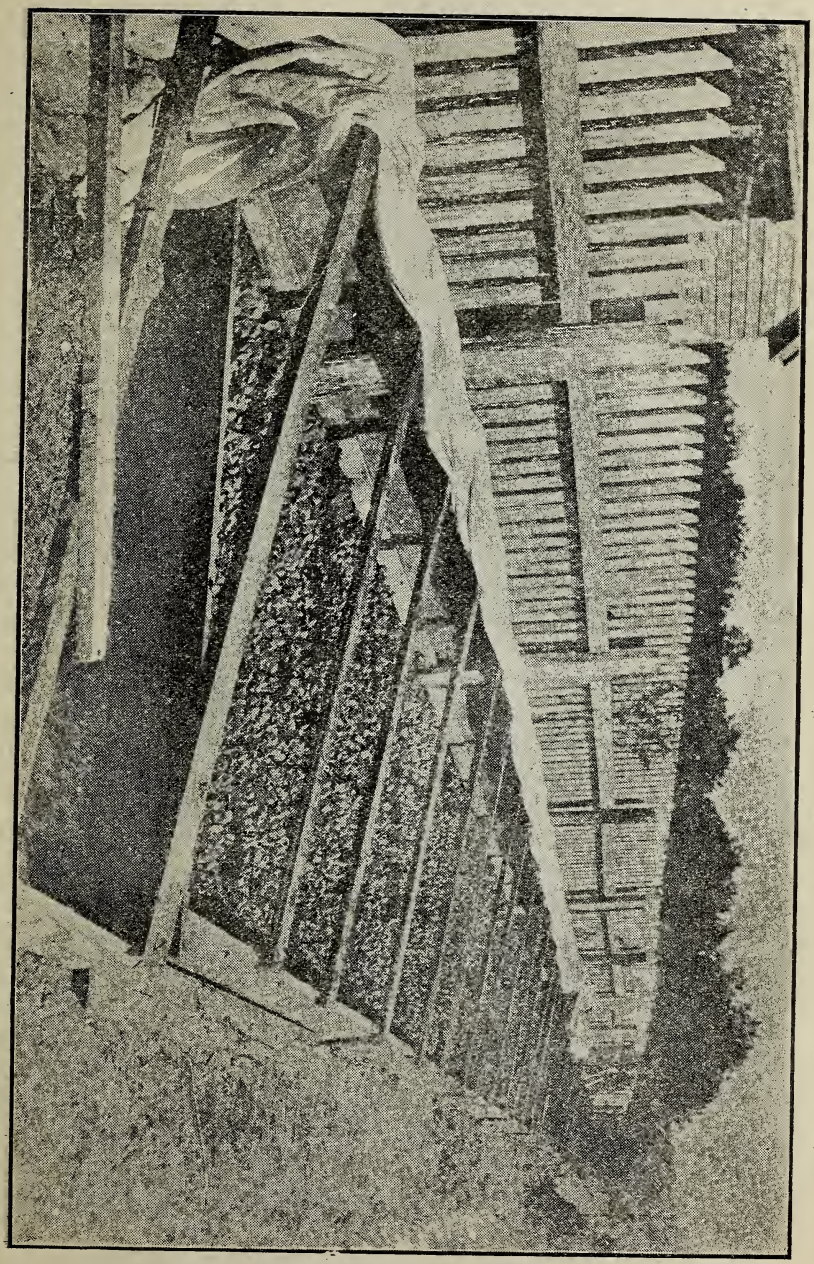
A thermometer placed in the bed, near the soil, is a great aid in its management. Its temperature should be kept up to 70 degrees if possible. On bright, warm days, the cover should be rolled back, and in all but the coldest weather, one corner should be kept up for at least half the day in bright weather. Water frequently but sparingly. Watch the plants closely, giving slight cultivation by stirring between the rows with a short stick, or other implement. If the plants show signs of damping off, withhold water, and give all the ventilation possible, without exposing to too much cold. If the bed is late, and it is desired to hasten the plants, or they are growing too slowly, stir two or three handfuls of rotted manure into a bucket of water, and water with this two or three times a week. For forcing plants, there is nothing so good as a couple of tablespoonfuls of nitrate of soda dissolved in the water once or twice a week. Be sure to follow an application of liquid manure with a bucket of pure water so as to wash the leaves clean. As soon as the plants are large enough to handle (four to six leaves with tomatoes), they are ready for, and should be transplanted to, the cold frame.

COLD FRAME.

A cold-frame is very much like an enlarged hot-bed, provided with a cover of light cheese cloth, but not provided with artificial heat. Eight feet wide and thirty feet long, will give sufficient room to hold plants for an acre of tomatoes. The cold frame is generally built in the center of the field in which the plants are to be set. Set up 1x12 plank on edge all around the

edge of the frame, letting it run north and south. Gable up the ends with 1x12 plank, making the gables about five feet high. Provide a ridge-pole for the center, supporting it by 1x4 rafters every four feet. The side plank should be kept from spreading by stakes driven into the ground outside the bed. and opposite the rafters. These latter should run from the ridge-pole to the top of the side plank. Provide a cover of cheese cloth sewn together large enough to cover the whole structure, and to lap well over ends and side plank. Tack it in the center to the ridge-pole, and to the edges tack light poles the length of the frame, so the cloth can be rolled up to the center. Spade the ground in the frame good and deep, work in a lot of well-rotted manure, and have fine and level. You are now ready for the plants. Tomatoes should be placed about four inches each way. Draw the plants from the hot-bed dry, by loosening the dirt with a trowel. Shake them free of dirt, and set one plant every four inches in the frame, making a hole with a stick, inserting the plant, and pressing the earth firmly around it. As soon as the plants are set, water the bed freely. The transplanting into the cold frame can be greatly facilitated by using the following described implement: A scantling, one by five inches, and long enough to reach across the bed, is bored with a line of one-inch holes, four inches apart, and with their centers four inches from one edge. Into these holes are driven inch pegs, four inches long, and sloping to a point. Wet the ground thoroughly, place this implement across the bed, pegs down, and with the wide edge next to the last row set, drive the pegs into the ground by pressing, or walking upon it, and when removed, you have holes for the plants clear across the bed. In bright, warm weather, roll up the cover during the daytime. As the plants approach the time for setting in the field, give more air, and for a week before setting, withhold water. On warm nights leave the cover up so as to harden them. The plants should not be placed in the field until all danger of frost is over.

These directions are especially for tomatoes, but will hold good with slight modifications, for all plants so delicate as to be injured by frost. Such plants as cabbage, onions and lettuce, do not need a hot-bed. The cold frame furnishes ample protection.



HOT-BED FULL OF PLANTS. WITH COVER ROLLED BACK, FEBRUARY, 1905. CALHOUN, LA.

PREPARATION, CULTIVATION AND FERTILIZING.

Than garden vegetables, there is no class of plants that respond more readily to good treatment. Select for their growing a light sandy loam soil that has grown a cover of peas the previous year, and, preferably, turn these peas under some two months before the land is needed. Plow deep, and pulverize thoroughly. All the well-rotted manure available should be worked into the land to be used for the growing of truck. As a general rule, cotton seed meal and acid phosphate will form the basis of all commercial fertilizers. To this might be added some potash in the form of kainit or sulphate. The proportions of these substances will vary with the plants to which they are applied. It should be remembered that cotton seed meal supplies nitrogen, and nitrogen tends to form leaf and stalk. With that class of truck crops in which the plant leaves are consumed, such as cabbage and lettuce, we should use relatively large quantities of this substance. On the other hand, phosphoric acid, supplied by the phosphate, tends to make fruit, and potash hardens and gives color to this fruit. Whatever the formula used, it must be borne in mind that truck crops are greedy feeders, and the best results are obtained by pandering to this trait. Six to eight hundred pounds of a mixture of two parts of meal to one of phosphate, is none too heavy for potatoes, whereas, cabbage will easily utilize fifteen hundred pounds (1000 of meal, 300 of phosphate, and 200 of kainit). These seem very large quantities, and the objection very often urged to their use, that the plants do not use all of this fertilizer, is very true. Yet, by adding these quantities a large amount of food is made available for the plant. What is left is more slowly soluble, and would not be of use to the plant, even if smaller quantities were used. Besides, this is not lost, as it will be utilized by the crop succeeding. It is the early vegetable that pays best. The difference of a few days in maturity very often places the balance on the wrong side of the ledger. These large quantities of fertilizer not only hasten the maturity, but are very beneficial on the quality, another very important consideration. The conditions of early maturity and tenderness emphasize the im-

portance of thorough and rapid cultivation. This should be frequent, but shallow, so as to avoid any danger of root injury.

HARVESTING, PACKING AND SHIPPING.

As a rule the crop should be harvested just before it reaches maturity. The time for this depends somewhat upon the distance from the market and the method of shipment. Remember that it costs just as much freight for a package of poor goods as for the best, and while there is a market for good produce, poor stuff not only does not bring good prices, but reacts upon the superior article, reducing its price. It is, therefore, poor policy to ship inferior goods. Inspect and assort rigorously, retaining all doubtful product for canning, or to be otherwise disposed of. Better lose it entirely than send it to market to undermine the good. Learn what kind of package the market you are selling in prefers. Provide that package, and pack the goods securely and honestly. Be sure the package is full. Not only is this more honest, but your produce will arrive upon the market in better condition if this is done. Have the goods in each package as near the same size as possible, and as near the same degree of ripeness. Do not make the error of placing the best on top. Remember that every package is examined by the buyer until he learns whether you are honest or not, and this practice fools no one, and only serves to make the buyer wary of your goods. Pack neatly in a neat clean package. Nail it up securely, stencil your name and post office, and the name of the consignee upon it, and ship as promptly, and by the most direct route possible. Notify the consignee promptly of the shipment in order that he may know it is on the way, and have a chance to provide for its reception and disposal. The shipment of perishable goods by freight in refrigerated cars, is preferable. Very early in the season, ventilated cars may give satisfaction. Except with a few packages of very early vegetables or fruits, express shipments will not, as a rule, be found profitable. Not only will the charges be four or fivefold, but the packages are handled so often, and so roughly, that they invariably reach their destination in poor condition. Besides this, there is no assurance as to the temperature being kept low, and a low temperature, while in transit, is essential to the arrival of your produce upon the market in good condition.

Careful selection, packing and shipping cannot be too strongly urged. Upon the intelligence and care with which this is done, depends, largely, the success of the shipper. Remember that after leaving your hands, and before reaching the consumer, these perishable goods are subjected to their greatest ordeal, and too much care cannot be given to make this test as light as possible. A proper understanding of this by the shipper would save many a disappointment, and many a hard word for the consignee.

DISPOSING OF THE GOODS.

Of course, all else being equal, it is much safer and more satisfactory to sell on the track. However, this is not always possible, nor is it always advisable when possible. It would be unjust to demand or to expect the buyer to pay you the net price of the Chicago market for your goods at your home town.

In buying from you there, he takes the risk of transportation, of the fluctuations of the market and pays all selling charges, and it is but just and right that he should be allowed a fair margin for these risks. On the other hand, human nature is the same the world over, and unless you watch Mr. Buyer closely, you will find he shows a decided tendency to make this margin unnecessarily large. To sell on track, intelligently and advantageously, therefore, you must make a close study of the market conditions. It is not enough to know what stuff sold for last week. You should know what it sold for the day before, and what the conditions of supply and demand are. Is the crop a large one? Is the movement to your market large or light? Is the demand brisk or dull? Is your railroad service efficient? All these questions should be considered, and unless the farmer recognizes that the disposal of his crop is a business, and adopts business methods, he is sure to come to grief.

In order to do this, it is necesary to have some reliable source of information. For this purpose, select some reliable commission house, and if necessary, pay them to furnish you daily market reports by wire during the shipping season. Do not begrudge the little money these telegrams will cost, for they will frequently save you many a dollar, even on one carload.

There is another point upon which we wish to lay special

emphasis. In engaging in truck-growing, do not fall into the one-crop system. Plant a variety. There can be made no greater error than that of placing your sole dependence in one crop. No produce is subject to greater fluctuations in value than that of the market-gardener, and many an embryo-trucker has been so disappointed by the results obtained when only one crop was planted, that he ever after is irritated at the mention of truck growing.

WHAT CROPS TO RECOMMEND.

Most any vegetable if placed upon the market early, and in good condition, will sell well, but it is best not to attempt too many varieties at first.

To the beginner, we would suggest that he plant half an acre in cabbage, half an acre in onions, one or two acres in potatoes, half an acre in beans, half an acre in tomatoes, and half an acre in Rocky Ford melons. This list will give him a good variety of experience, and is as much as he should attempt the first season. Do not make the fatal mistake of over-cropping. Remember that truck crops take, relatively, a large amount of labor, will not await the convenience of the farmer for cultivation, and must be gathered at the right time.

A few suggestions as to the planting, cultivation, and handling of these would not be amiss, in the order in which they should receive attention.

CABBAGE.

Cabbage is the first crop. The variety that has given the best general results is the Charleston Wakefield. The seed should be sown thinly in December, or early in January, in a cold-frame. A frame, five by twenty feet, should give ample plants for an acre. Provide a light cheese cloth to protect the plants in the coldest weather. They should be ready for the field by the middle of February. Plow the land well and deep, and have in fine condition. Lay off the rows three and one-half feet apart. If commercial fertilizer is used, apply half in the drill, and list upon it with two light furrows. Then put the remainder in the two side furrows and break out the middles shallow. Set plants from two and one-half to three feet in the drill. If it is dry, punch holes with a stick, fill with water, insert the plants,

AN ACRE OF TOMATOES AT CALHOUN EXPERIMENT STATION.
MAY 20, 1904.

FIELD OF CABBAGE AT ROSELAND, LA.

and press dry earth around them. As soon as the plants have started growing stir the ground around them, and give clean frequent cultivation. If troubled with flea-beetle, dust the plants with air-slacked lime. Cut-worms can be held in check by placing a small quantity of poisoned bran between the hills. If troubled with cabbage worms, or other worms, do not hesitate to use Paris green dusted lightly on the plants. When headed good and hard, they are ready for shipment.

Cabbage are best shipped in crates, weighing when full, from 175 to 200 pounds. They are made of 1x3 dry stuff, using three slats to a side, the finished crate measuring 15x15x30 inches. Take the ready made crates to the field. With a sharp knife cut the head from the stalk, close up. Remove all but two or three loose leaves, and pack in the crate lightly, pressing them in. Fill over full and press top slats down with the knees, and nail securely. Mark your name on the side, and the name of the shipper and the weight, on the end, and ship promptly in ventilated or stock cars.

ONIONS.

There are two methods of proceeding with onions. Either raising them from seed, or putting out sets. If it pays the other fellow to raise the sets and sell them to us, we had as well make that profit and plant the seed ourselves. For this purpose, the seed (Red Wethersfield is our choice) should be sown in the cold-frame by the 15th of December. Very slight protection is needed even in the coldest weather, unless they are growing very rapidly.

Prepare the ground as for cabbage, using from 1000 to 1,500 pounds of the same fertilizer, and applying it in the same way. Set the plants 4 inches apart in from three to three and one-half foot rows. For hand culture the rows may be one foot apart. Give about the same cultivation as cabbage. When ripe, lift from the ground, remove the roots and tops, and pack for shipment in clean two-bushel sacks. Sew the sacks securely, leaving projecting ears for handling. Mark your name or initials, the consignee's name, and the weight, upon the sack, and ship in ventilated or stock cars.

TOMATOES.

Tomatoes are by far the most difficult crop for the novice to handle, and yet, when properly handled, will probably give him the largest returns. They should be sown in the hot-bed from the 20th of December to the 10th of January. The Acme or the Beauty is about as good a selection as can be made. The directions for the management of the hot-bed and cold-frame, are applicable to the tomato, so it is needless to repeat them. The plants should be ready to go to the field as soon as the danger of frost is over. This should be safe by the 20th of March to the 1st of April. Do not risk a frost by trying to get the plants into the field too early. They will be injured less by crowding in the cold-frame than by frost. Have the land well prepared, and lay it off in four-foot rows. Apply the fertilizer as with the previous plants, using 500 pounds cotton seed meal, 300 pounds acid phosphate and 200 pounds kainit. Open the rows with a small scooter. Wet the soil in the cold-frame until saturated. Remove a four-inch block of earth, in which the plant is setting, to a depth of four inches, with a small trowel. Set the plants and adhering dirt on a slide, or hand-barrow. When taken to the field on this slide, or barrow, set a plant with its adhering dirt every three feet in the previously opened furrows. Throw two light furrows back upon this, and the setting is done. As with cabbage, cultivation should be clean and frequent, but very shallow. As soon as the plants show a disposition to fall over, they should be staked and tied. The stakes used for this purpose are light 1x1 strips three feet long, and are generally split from pine. Drive one down firmly by each plant, on the side opposite the bloom, and tie the plant, with ordinary cotton twine, just under the fruit bud, to this stake. Be careful not to tie it tight; let it have room to grow, and not be cut by the twine. The plants will now begin to send out suckers, or branches, from the axil of each leaf. These should be carefully removed every day or so, and no branching allowed. There is no danger of confounding the sucker with the fruit branch. The former starts where the leaf joins the stalk, just above the junction; whereas, the latter starts from the stalk on

the side opossite the leaf. Repeat the suckering and tying whenever necessary. Plants will ordinarily require about three tyings. In tying, be careful to twist the fruit bud away from the stake, so the fruit will not rub against the stake and be damaged. When the plants have set from four to five fruit buds, pinch out the end bud. This is done to check the growth of the plant, thus forcing all the strength into the fruit already set. As a result, this fruit will reach a greater size, and will ripen earlier.

Damp, murky weather is favorable for the rot. It is, therefore, not a bad idea to spray as soon as the fruit forms, with Bordeaux mixture, in which is stirred a little Paris green. If this is done, it should be after each fruit bud appears, to obtain full results.

The rot is not a frequent visitor, however, and the chances of its appearance may be taken. As soon as the fruit shows the first blush of red around the blossom end, it is ripe enough for shipment. Do not ship before, as it will not ripen evenly. The fruit should be gathered in baskets holding not over a bushel, brought to the packing shed, and spread upon a table. The four basket, or the one-third bushel crate, is the approved package for tomatoes. These we bought last year for 7½ cents, f. o. b. Calhoun. Pack the fruit in the baskets, laying them evenly, and pressing them in tight. Select as near the same size and degree of ripeness for each basket and crate. Discard all misshapen or injured fruit. Pack nothing that is not perfect. If the tomatoes are large, make two layers, laying them flatwise, and filling up any remaining room with a single small fruit. Pack them tightly, but be careful not to bruise. In packing medium-sized fruit, put the bottom layer in on edge, filling in the top with a flat layer. With smaller fruit, both layers are "rolled" or packed edgewise. In doing this, make a row all around the edge of the basket first, being careful to place the blossom end out, then fill in as evenly as possible, observing the same rule in regard to the blossom. The baskets should be so filled that when the tops are nailed on, they will press the fruit down firmly, but not hard enough to bruise. As soon as packed, put in a cool place, and ship as soon as possible. The refrigerated car is the only satisfactory way to ship tomatoes.

A car will hold from 600 to 800 crates. The icing charge, when divided among this number, amounts to very little, and will be more than returned in the better prices realized.

In packing tomatoes or fruit in a car, the crates should be laid carefully in rows, and a couple of 1x1 strips placed at least between every other layer for better ventilation. If the car is not filled from end to end, the end of the tiers should be well braced. A stout strip should also be laid across the top of each row of crates, and braced from the roof. Any one who has ever traveled on a freight train will realize the necessity for these precautions.

POTATOES.

The Triumph is the potato the market wants, hence, is the potato to plant. Ground for potatoes should be broken good and deep not later than the middle of January. Re-brake from the 20th of February to the 10th of March; bed the land in four-foot rows, and plant about March 10th. The fertilizer, consisting of 800 to 1,000 pounds, composed of 3 parts cotton seed meal, 2 of acid phosphate, and 1 of kainit, should be applied as for the other vegetables above. Avoid the use of much stable manure for potatoes, for, while it will give large yields, the fruit is apt to be scabby, and will not sell well. Cut the potatoes to two good eyes, and drop the pieces about 16 inches in the drill. Cover lightly, and cultivate well. If troubled with potato beetle, poison with Paris green. One or two light applications will put him out of business. Do not dig before the potato is ripe, or they will rot in transit. This stage may be known by the vines beginning to turn yellow and dying. Do not dig when the soil is too wet, or you will have dirty potatoes. Assort as soon as dug, throwing all potatoes less in size than a hen-egg into the culls. Here place, also, all sunburned, bruised, cut, or skinned potatoes. Do not let the sun shine on them for any longer time than necessary, for it will scald them, and cause them to rot. Handle the crop carefully, and as little as possible, in order not to bruise or skin them.

Potatoes are shipped in two kinds of packages. Clean flour barrels, ventilated at the sides and ends, or a sack holding about 90 pounds, or one and one-half bushels. The sack being cheaper, is preferable. Save the cotton seed meal sacks for this

purpose, but wash them clean before using. If possible, sack, or barrel them right in the field, being careful to have the barrels full and well shaken down. Sew the sacks tightly and neatly with strong twine, rolling the surplus sacking inside, and leaving good projecting ears for handling. Mark the weight, the initials of consignee and your own on the sack. In loading, start at one end of the car and stand the sacks up close to each other and to the end, making a row across the car. Break joints with the next row, keeping the sacks pushed up close. Fill to the door this way, then start at the other end. Nail a stout scantling across each door, so as to keep the sacks in. One layer of sacks on end, and one layer laying down on top of these, is all that should be loaded in a car. Loaded in this way, a car will hold from 400 to 450 bushels.

BEANS.

Three varieties, Improved Valentine, Kidney Wax, and Dwarf Lima, may be planted. As with other vegetables the ground should be well prepared. The rows should be 3 1-2 feet apart, and the beans drilled about 2 inches apart, between the 20th of March and the 1st of April. The bean differs in its fertilizer requirements from all the other vegetables above mentioned, in that it belongs to the great nitrogen-gathering family of Legumes and hence, requires very little nitrogenous fertilizer. Some small quantity is beneficial, however, in that it starts them off more rapidly. As a fertilizer, we would recommend 2 parts of acid phosphate, 1 part of cotton seed meal, and 1 part of kainit. Beans should be gathered as soon as well filled, and before they get tough and hard. Ship in the bushel hamper basket. Lay them in straight, shaking well, as filled, and heap them up before pressing on and fastening the cover. Ship in ventilated, or, preferably, refrigerated cars.

CANTELOUPES.

The Rocky Ford melon has a reputation on the market that none can equal, and, hence, it is the melon to plant.

Prepare the land thoroughly in five-foot beds. Use all the well-rotted stable manure available, working it well in, and bedding on a good quantity. Apply in the drill 600 to 800 pounds of a fertilizer composed of 3 parts cotton seed meal,

2 parts acid phosphate, and 1 part kainit. From the 1st to the 10th of April, plant in hills, 4 to 5 feet apart in the row, and cover lightly. If troubled with insects, powder with air-slacked lime, containing a small quantity of Paris green. Cultivate clean and rapidly, and commence shipping as soon as they begin to turn. Do not ship a green melon. Canteloupes are shipped in barrels, or, preferably, crates, weighing when full about 80 pounds. They are best shipped in refrigerated cars.

REMARKS.

Doubtless, a good deal of the above will seem superfluous to many. Our reason for going so minutely into detail is the fact that truck-raising and shipping is a business of detail, and one in which a lack of knowledge of detail receives a sure and swift punishment. It is not expected that this will be of much, or any, value to the experienced grower. It can be of very great value to the novice. The suggestions are from knowledge gained by actual experience, and from a careful study of the best methods used by experienced growers elsewhere, and from observations made, in person, upon the markets in which the produce is sold.

The one great suggestion that these observations sound in most emphatic terms is, the necessity for co-operation. To ship in carloads requires considerable acreage, and more time and labor than can well be given by any one farmer. It is only possible by co-operating with his neighbor, and this brings about organization into associations. The selling of the product is almost a distinct business, and, in order that it may be intelligently done, there should be someone whose special business it is. The first step to succeed, then, in truck-growing, is to get your neighbor interested, and the organization of a Fruit and Truck Association. Select for your officers men of good business ability, who can and will give their time to the business, and in whom you have confidence. If means will permit, and you can get him, it is good economy to employ the services of an experienced shipper as director and instructor for the first season. While the growing of truck is, and can be made remunerative, and the Station recommends it wherever the transportation facilities will permit, yet it wishes to warn all, lest they be dis-

appointed, that the big results you read about are not to be expected every day, and especially by a beginner. Yet even the beginner, if he goes into the business conservatively, and with the determination to succeed, should find it quite profitable.

QUANTITIES OF SEED NECESSARY TO PLANT AN ACRE.

Beans, in drills, 2 bushels per acre.
Beets, in drills, 5 pounds per acre.
Cabbage, sown in bed, 1-4 pound per acre.
Cucumber, in hills, 2 pounds per acre.
Lettuce, seed sown in beds, 1-2 pound per acre.
Musk melon, in hills, 2 pounds per acre.
Water melon, in hills, 4 pounds per acre.
Onions, seed sown in beds, 1 pound per acre.
Onions, seed sown in field, 5 pounds per acre.
Onions, sets, 8 to 10 bushels per acre.
Peas, 1 1-2 bushels per acre.
Potatoes, 6 bushels per acre.
Radishes, in drills, 8 pounds per acre.
Squash, in hills, 2 pounds per acre.
Tomatoes, seed sown in beds, 1-4 pound per acre.

NOTE ON FERTILIZERS.

While all experiments conducted in Louisiana indicate that no potash is required for farm crops, and that it is of doubtful utility in increasing the yield of truck crops, in order to be sure that an abundance of food is supplied in easily available form when growth is forced, and from the general conviction among experienced truckers that potash adds some desirable characters to the products, such as firmness in berries, we have recommended a moderate use of potash. Muriate of potash is preferable to kainit, as it has about four times the per cent of potash found in kainit, so there is less freight to pay on useless, if not worse than useless matter.

It will be noticed that there is a difference in the proportions of the ingredients of the fertilizers recommended and those actually used. These recommendations are made after a careful comparison of the results of a series of years and are considered better than the proportions used during 1904.

THE GARDEN.

By E. J. Watson, Horticulturist.

The character of work previously carried on in the vegetable garden was modified the past season and trucking experiments on a larger scale were undertaken. These experiments, with a few unimportant exceptions, were successfully carried out, and much valuable experience and information secured that will be of great benefit in future operations along this line.

The leading crop in these experiments was

TOMATOES.

The seed were planted in the hot-bed January 19th. The planting should have been earlier, but there was an unavoidable delay in getting the seed. The varieties used were Acme and Beauty. The planting covered seven-eighths of an acre. On March 1st the plants were transferred to the cold-frame, and again, on April 1st, to the field. They were set 3 feet in the drill and in 3 1-2 feet rows. Six hundred pounds of fertilizer, consisting of two-thirds cotton seed meal and one-third acid phosphat, per acre, was applied in the drill. This was supplemented with 50 pounds of nitrate of soda, applied after the plants had commenced growth. The plants were tied to stakes and trained to a single stem, all suckers being rubbed off as they appeared. An average of from four to six fruit bunches were allowed to the plant.

The crop set was enormous. Express shipments began on June 8th, but about this time the rot appeared and two-thirds of the crop was destroyed, only the bottom crop remained for the early shipments. Later the top crop afforded several light shipments, but prices were then low.

Two hundred and thirty-six crates were shipped, besides 20 bushels, or about 60 crates, were canned. These brought an average of 50 cents per crate, net. The quality of the fruit and the packing were pronounced by experts as up to the market standard.

In view of the fact that the fungus causing the rot is easily preventable by the judicious use of Bordeaux mixture, it will

readily be seen that from four to five hundred crates of fruit could have been shipped from the seven-eighths of an acre. But we had not anticipated the rot, as it had not previously given any trouble in tomato growing here for the past twelve years, and consequently we were not prepared to deal with it. The coming season, however, will find us prepared.

By keeping a very strict account the total cost of producing an acre of tomatoes from seed-bed to market, was found to be in round numbers $50.00 per acre. This was based on labor at $1.00 per day, which is probably too high. Where spraying is done this would not be too high, and the proceeds should be correspondingly greater.

POTATOES.

One-half of an acre of potatoes was planted February 15th. Only the Bliss Triumph variety being used. Four hundred pounds of commericial fertilizer, consisting of equal parts of cotton seed meal and acid phosphate, was used per acre. The weather conditions during April and May were very unfavorable for the development of the tubers, and consequently the yield was so light that from a commercial standpoint the crop was a failure. Such unfavorable conditions may not, and probably will not prevail again for many years. The yields of previous years at this Station indicate that the yield of potatoes of any average year are such as to bring remunerative returns, when sold at anything like a fair price.

CABBAGE.

This crop was very successful and good prices were secured. Only one-eighth of an acre, however, was grown. The seed was planted in cold-frame February 1st and transplanted to the field March 7th. One thousand pounds of commercial fertilizer, consisting of 600 pounds cotton seed meal and 400 pounds acid phosphat, was used per acre. The yield was 16 crates for the eighth of an acre, weighing 175 pounds per crate, or 128 crates per acre. A small shipment was made to Cincinnati, and they brought $2.50 per crate. This shipment was per express and no profit was realized on the shipment, but in car lots, by freight, the net returns should have been not less than $2.00 per crate. It was difficult to figure the cost of production per acre on so

small an acreage, but from an account of the labor expended on the plat (one-eighth of an acre), it would amount to about $5.00, or $40.00 per acre, which at the yield and figures secured, would leave a very handsome profit. We expect to grow a larger acreage in cabbage the coming season. The variety used the past season was the large, or Charleston Wakefield, which we believe to be admirably adapted to the early market crop.

BEANS.

Only one-fourth of an acre was planted in snap beans—the Early Mohawk variety being used, which did not prove suitable for the market (Cincinnati) to which they were sent, a wax bean being wanted. They were planted March 22d, and the weather afterwards proved very unfavorable, which reduced the quality and yield. Four hundred pounds of commercial fertilizer, per acre, consiting of equal parts cotton seed meal and acid phosphate, was used in the drill. Shipments began May 15th, which was very late, but cold weather held the crop back. The total yield of green beans on the plat (one-fourth of an acre), was 18 bushels, or 72 bushels per acre. During a favorable season the yield would be much greater. The prices received averaged 50 cents per bushel, net. The cost of the labor was estimated to be about $20.00 per acre, including cost of seed and fertilizer.

RADISHES.

A small quantity (one-eighth of an acre) of radishes was planted February 15th, but, as with the beans, cold weather prevented the quick and full development of the crop, consequently they were not in time for the market. The total yield was 820 bunches, 6 to 10 radishes per bunch, for the plat (one-eighth of an acre), or 6,560 bunches per acre. No sales were made, but they were worth about 30 cents per dozen bunches, net. The variety grown was the Long Scarlet. The French Breakfast would have been more suitable for the purpose. It is of quicker growth and in greater demand.

BUSH LIMA BEANS.

A small planting (one-fourth of an acre) of Henderson's Bush Lima Beans was made March 22d. The fertilization

and cultivation being the same as for the snap beans. The results were not satisfactory and a second planting was made the first of June, which did splendidly, giving a yield of 24 bushels of dry beans (shelled) per acre, worth $2.00 per bushel, net.

CUCUMBERS.

On April 9th a planting of cucumbers (one-eighth of an acre) was made, consisting of one row each of the following varieties, all from home-raised seed: Early Green Cluster, Long Green Turkey, White Spined, New Orleans Market, Fordhook Famous. These were planted in rows 5 feet apart and 5 feet apart in the drill. Eight hundred pounds of commercial fertilizer per acre was used, being equal parts of cotton seed meal and acid phosphate. The yield was obtained by securing the number of bushels of "cukes" of marketable size. The yields of the different varieties being as follows: Early Green Cluster, 80 bushels per acre; Long Green Turkey, 82; White Spined, 72; New Orleans Market, 76; Fordhook Famous, 64. No sales were made and the market price per bushel was not obtained.

CANTALOUPES.

One-half acre was planted in cantaloupes April 4th, consisting of the following varieties (one row each), all from home-raised seed: Netted Nutmeg, Rocky Ford, Long Island Beauty, Golden Netted Gem, New Orleans Market, Baltimore or Acme, Osage, Delmonico, Acme-Arundel, Banana Citron. These were planted in rows 6 feet wide and the hills 6 feet apart in the drill. They were fertilized with stable manure, at the rate of 100 bushels per acre applied in the drill. The earliest varieties to ripen were Netted Nutmeg and Rocky Ford, June 30th, followed by Golden Netted Gem, July 3d. The yield per acre in bushel crates from each variety was as follows: Netted Nutmeg, 30 crates; Rocky Ford, 46; Long Island Beauty, 34; Golden Netted Gem, 45; New Orleans Market, 38; Baltimore or Acme, 42; Osage, 32; Delmonico, 35; Acme-Arundel, 44; Banana Citron, 22. Only one small shipment was made, on July 5th, the average price being $1.25 per bushel, net. The yield was far below the average of previous seasons on the Station, mainly on account of excessive rainfall during the fruitng period. The quality of the crop was good.

The labor expended on the one-half acre footed up in round numbers $15.00, or $30.00 per acre, on a basis of $1.00 per day for labor, including cost of seed, crates, fertilizer, etc.

WATER MELONS.

Three-quarters of an acre in water melons were grown, consisting of one row each of the following varieties: Ice Cream, Carolina Bradford, Jordan's Gray, Pride of Georgia, Kolb Gem, Rattlesnake, Triumph, Jones, Lone Star, Eden, Halbert Honey. All these except the last named were of home-raised seed. One row each of these was planted, besides one-third acre in Kolb Gen alone. The planting was made April 20th. The rows were 10 feet apart and the hills 10 feet in the drill. The land was prepared and fertilized the same as for cantaloupes. The varieties began ripening July 1st, Jordan's Gray being the first to ripen. The yields were estimated from the average number of salable melons per hill, which was from 3 to 5. The yields per acre were as follows: Ice Cream, 652 melons; Carolina Bradford, 956; Jordan's Gray, 985; Pride of Georgia, 874; Kolb Gem alone. The planting was made April 20th. The rows were Star, 540; Eden, 625; Halbert Honey, 542. These yields are far below the average of previous years at the Station. No sales were made, but melons were selling at the time on the Cincinnati market for about $10.00 per 100. The estimated cost of production, per acre, was in round numbers $20.00.

The melons were of good size, averaging 24 pounds per melon, and the quality was excellent, particularly of Carolina Bradford, Pride of Georgia, Kolb Gem and Triumph.

SQUASHES.

One-quarter of an acre in squashes was planted April 18th, consisting of two varieties: Early White Bush and Summer Crookneck. Preparation, cultivation and fertilization same as for cucumbers.

A small shipment was made June 25th, netting 75 cents per bushel crate for the Early Bush—the Crookneck was not shipped. The yield per acre was 70 bushels for the Early Bush and 66 for the Crookneck.

The cost of production footed about $20.00 per acre.

OKRA.

On April 18th one-eighth of an acre was planted in okra, of the following varieties of home-raised seed: Dwarf Green Prolific, French Market, White Velvet. Four hundred pounds of commercial fertilizer was used per acre, and the preparation and cultivation were very much the same as that ordinarily given cotton. No shipments were made of the crop, but a considerable quantity was very successfully canned, which proved to be of highly satisfactory quality.

By keeping the mature pods pulled off the crop lasted through the entire season until frost.

The average yield for the season was estimated to be 60 bushels per acre. No prices on the fresh product were obtained.

BUSH BEANS.

Fifteen varieties of bush beans were planted March 24th, as follows: Dwarf German Wax, Early Mohawk, Best of All, Improved Valentine, Extra Early Refugee, Early Yellow Six Weeks, Davis' Kidney Wax, Wardell's Kidney Wax, Perfection Wax, Red Kidney Wax, Detroit Wax, Stringless Green Pod, Currie's Rust-Proof Wax, Early Refugee Wax, Keeney's Rustless Golden Wax. Owing to unfavorable weather these did not develop fully. Yet the crop as a whole was good and the success of home-grown seed was fully demonstrated, although the varieties were badly mixed from being grown together for several years continuously.

The yields per acre in bushels were not obtained, as only a small space was devoted to each variety. The yields on a scale of 10, stood as follows: Dwarf German Wax, 7; Early Mohawk, 8; Best of All, 6; Improved Valentine, 9; Extra Early Refugee, 6; Early Yellow Six Weeks, 5; Davis' Kidney Wax, 8; Wardell's Kidney Wax, 8; Perfection Wax, 7; Red Kidney, 4; Detroit Wax, 7; Stringless Green Pod, 9; Currie's Rust-Proof Wax, 10; Early Refugee Wax, 6; Keeney's Rustless Golden Wax, 8. A good selection for either home use or market is Dwarf German Wax, Improved Valentine, Davis' Kidney Wax, Stringless Green Pod, Currie's Rust-Proof Wax. Early Mohawk is

extensively used for the very early crop on account of its hardiness, but it cannot be grown in this locality very early, and at the same time secure a good yield and good quality.

PEAS.

The following varieties of peas were planted January 19th: First and Best, Saxton's Alpha, White Marrowfat, Black Marrowfat, Champion of England, Dwarf Telephone, Telephone, Tall Sugar. These were all from home-raised seed. It was not intended to plant the crop for commercial purposes, consequently only a small area was planted, but the crop proved to be so successful that a small shipment was made May 5th. They sold for 50 cents per bushel, net. The early varieties, First and Best, and Saxton's Alpha, produced a very heavy crop, but were over before any were placed on the market. Those shipped were from the Marrowfats. The yields on a scale of 10, were as follows: First and Best, 10; Saxton's Alpha, 10; White Marrowfat, 9; Black Marrowfat, 9; Champion of England, 7; Dwarf Telephone, 6; Telephone, 6; Tall Sugar, 7.

ONIONS.

At the beginning of the year it was not contemplated that any onions should be grown as a truck crop, consequently only a small area was planted in sets of the Red Weathersfield, early in January, for table use. They were heavily fertilized with stable manure and later with cotton seed meal, at the rate of 500 pounds per acre. The crop was highly successful, producing at the rate of 86 bushels per acre. No special effort was made to produce a commercial crop. Onions were selling at the time, $1.50 per bushel.

TOMATOES—VARIETIES.

Thirteen varieties of tomatoes from home-raised seed were planted in hot-bed February 23d and transferred to cold-frame April 15, and later to the field, May 10th. The varieties are as follows: Acme (home seed), Acme (northern grown), Early Jewell (northern grown), Early Jewell (northern grown seed), Beauty (home seed), Beauty (northern grown seed), Ponderosa, Favorite, Perfection, Large Yellow, Paragon, Honor Bright, Stone, Extra Early Dwarf Red.

The crop produced was good, both as to quantity and quality, but owing to the small area devoted to each variety the yields in bushels per acre was not obtained. Several duplicate experiments of home-raised and northern grown seed were conducted, but the difference in the results was very small.

The results on a scale of 10, were as follows: Acme (home seed), 8; Acme (northern seed), 8; Early Jewell (home seed), 9; Early Jewell (northern seed), 8; Beauty (home seed), 8; Beauty (northern seed), 8; Ponderosa, 6; Favorite, 5; Perfection, 6; Large Yellow, 4; Paragon, 7; Honor Bright, 7; Stone, 9; Extra Early Dwarf Red, 8.

The Early Jewell (Chalk's Early Jewell), which is sent out by Burpee, and tried here for the first time last season, proved again to be a magnificent variety.

The following new varieties were sent by W. A. Burpee & Co., for trial:

Crimson Giant Globe Radish: Appears to be a good variety.

Danish Round Head Cabbage: Proved very satisfactory; heads small, solid, uniform.

Early Model Beet: Early and good.

Nameless Black Red Beet: Later than the above; good size and quality.

Butterhead Lettuce: Unsatisfactory; heads soft and open.

Express Company's Lettuce: Appears to be good.

New Brittle Ice Lettuce: Very fine and solid, crisp.

Clark's Early Jewell Tomato: A decided acquisition.

Spark's Earliana Tomato: Early, but otherwise ordinary.

"Prolific" Pea: One of the earliest tested.

Senator Pea: Pods very large and well filled, but did not produce abundantly.

English Wonder Pea: A new dwarf variety; promising.

British Wonder Pea: Similar to the preceding.

Halbert Honey Water Melon: Of small to medium, oblong, dark green; flesh deep red, sweet; in all respects a good melon for home use; too small for market.

Fordhook Famous Cucumber: No doubt a valuable acquisition.

TABLE SHOWING RESULTS OF THE MOST PROMISING AND SUCCESSFUL VARIETIES OF PEACHES OF THE PAST SEASON (1904).

VARIETY.	Date of Blooming.	Date of Ripeing.	Class.*	Number of Crates (⅞ bu.) Per Acre (Estimated.)	Value of Crop, Per Acre, (Estimated.)	REMARKS, ETC.
Alton	March 8	June 6	f	436	$218	A white peach, large size, good.
Alexander	March 10	May 20	f	436	218	A well known variety.
Amelia	March 6	June 24	f	109	55	A large size, good peach.
Berenice	March 3	June 30	f	436	218	One of the best for general purposes
Berckman's	March 6	June 28	f	545	272	A very heavy and regular bearer.
Bequett Free	March 8	July 1	f	218	109	A large white peach, very good.
Bokara No. 3	March 3	June 20	f	436	218	A heavy and regular bearer.
Carman	March 3	June 6	f	109	55	A very large and attractive peach.
Carpenter's	March 8	July 5	c	327	163	A handsome peach of good qualities
Champion	March 3	June 23	f	109	55	A very good peach.
Crawford Early	March 3	June 28	f	436	218	Bears irregular.
Crawford Late	March 3	July 10	f	218	109	Bears irregular.
Columbia	March 8	July 16	f	327	163	A good peach of the Spanish type.
Crosby's	March 3	July 12	f	109	55	A very shy bearer.
Early Beatrice	March 18	May 20	f	218	109	Fruit of small size, good quality.
Early Louise	March 12	May 30	f	218	109	Larger than the preceding.
Early Rivers	March 9	June 5	f	218	109	A large white peach, good.
Early Tillotson	March 3	June 15	f	436	218	One of the best.
Elberta	March 3	July 1	f	436	327	Size and quality fine.
Galveston	March 3	May 26	f	654	327	A medium size, white peach.
Gen. Lee	March 8	July 1	c	109	55	Very large, white.
Georgia Cling	March 8	July 10	c	327	163	A good peach for home use.
Greensboro	March 8	May 25	f	436	210	A good variety.
Grand Admiral	March 8	July 6	c	218	109	Name obscure, has not been verified.
Juno	March 6	Aug. 1	c	218	109	A yellow cling, good.
Lady Ingold	March 6	June 24	f	436	218	A very attractive yellow peach.
Lulu	March 3	July 20	f	109	55	A yellow peach of the Spanish type.
Mamie Ross	March 1	June 6	f	436	218	A leading variety.
Miss Lola	March 8	June 8	f	109	55	A good white peach.
Mountain Rose	March 3	June 25	f	545	272	One of the best.

TABLE SHOWING RESULTS OF THE MOST PROMISING AND SUCCESSFUL VARIETIES OF PEACHES OF THE PAST SEASON (1904)—CONTINUED.

VARIETY.	Date of Blooming.	Date of Ripening.	Class.*	Number of Crates (⅛ bu.) Per Acre (Estimated.)	Value of Crop, Per Acre, (Estimated.)	REMARKS, ETC.
New Prolific	March 8	June 28	f	327	$163	Small size, yellow.
Old Mixon Free	March 6	July 6	f	654	327	Well known.
Old Mixon Cling	March 6	July 10	c	218	109	Good for home use only.
Onderdonk	March 6	July 20	f	218	109	A good yellow peach. Spanish type.
Oriole	March 6	July 10	c	545	272	One of the best for home use.
Pallas	March 3	June 25	f	218	109	A good variety of the honey type.
Plant	March 6	July 5	c	218	109	A very attractive yellow cling.
Reeves' Favorite	March 6	June 30	f	109	55	A very good yellow peach.
Sea Eagle	March 8	July 8	f	218	109	A medium size white peach.
Smock Free	March 8	July 22	f	327	163	A good yellow peach.
Sneed	March 6	May 12	f	109	55	The earliest on the list.
Stump the World	March 8	July 5	f	327	163	Good only for home use.
Thurber	March 6	June 28	f	872	436	The largest yield for the season.
Triumph	March 8	May 30	f	327	163	A good early yellow peach.
Wonderful	March 8	July 22	f	327	163	A good yellow peach.
Victoria	March 3	July 15	f	109	55	A large size yellow peach.
Yellow St. John	March 3	June 15	f	327	163	A well known market sort.
Woddell	March 3	June 20	f	327	163	A good peach.

*F—Free stone. C—Cling stone.

The above constitutes a good list to select from, for any purpose desired. The cream of the list is about as follows: Alton, Alexander, Berenice, Berckman's, Carman, Early Tillotson, Elberta, Galveston, Greensboro, Mamie Ross, Mountain Rose, Old Mixon Free, Oriole, Sneed, Smock Free, Thurber, Triumph, Woddell.

Those given below have been found undesirable: Summer Snow, Gold Dust, Chair's Choice, Salway, Fitzgerald, Imperial, Cobler's Indian, Lemon Cling, Climax, Colon, Angel, Gov. Briggs, Florida Gem, Bidwell's Late, Bidwell's Early, Albright's Winter, Emma, Stenson's October, Waldo, Everbearing, Heath's Late White, Deming's September, Klondyke, Eaton's Gold, Susquehanna, Chinese Cling, Texas, Early Cream, Rupley's, Maggie Burt, Early China.

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PLUMS.

Some very satisfactory results have been obtained from the plums the past season, but confined to only a few varieties. The majority of the trees have lately been dug out and burned, as many had died during the season and nearly all showed signs of being diseased. Very successful results were obtained from the Abundance variety, which bore a very large crop. Several crates were shipped to Cincinnati which topped the market, bringing $2.00 per crate. Other varieties, viz.: Milton, Chabot, Poole's Pride, and Cumberland, did well.

APPLES.

For several years past extensive tests of all the many commercial varieties of apples have been made, but without any decidedly promising results. The following summer varieties are successful and their culture could possibly be made profitable: Yellow May, Red Astrachan, Red June, Early Harvest. Our future work with apples will be principally along the line of developing kinds peculiarly adapted to this climate.

PEARS.

The pear orchard continues promising; the trees are all in a healthy and vigorous condition. A very large crop was obtained from Leconte the past season, the Kieffer also bore heavily. The Bartlett is also very promising. The Magnolia, a new variety, is also doing well.

STRAWBERRIES.

Variety tests of strawberries were continued the past season, but will hereafter be discontinued and the work in this line devoted to fertilizer tests, and demonstrations in commercial growing and shipping, and for this purpose one-half acre was set out during November, the variety being used being Lady Thompson.

FIGS.

The Celestial, or Celeste, continues to give excellent results. The Brown Turkey also does well. Madeline has at times given good crops, but is too tender for this climate. The other kinds that have been grown here are too tender.

COMMERCIAL ORCHARD.

One acre of peaches, consisting of Sneed, Mamie Ross and Elberta, has recently been set out, the object being a demonstration in commercial peach growing. Fertilizer tests will also be made with this orchard. Twenty plum trees, of the Abundance variety, were also set out.

THE CANNING BUSINESS.

E. J. Watson.

A question of very considerable economic importance to the farmers of the State is that of utilizing to the best advantage and profit the surplus, or otherwise waste products of the farm, such as fruits and vegetables.

To can these, for home consumption and market; to raise a supply for these special purposes, and to eventually build up a home canning industry, is one of the most promising additions farmers can engage in.

To gain reliable data, to encourage work in this line and to disseminate information, the Station inaugurated demonstration work in this line on a small scale the past season.

To build and operate a canning business on large commercial basis belongs to the domain of the expert with ample

capital; but fortunately, there are means and methods by which any small farmer, or enterprising individual, whether farmer or not, can very successfully build up a canning business for himself, provided he will go about it intelligently.

The outfit the Station used the past season is the Rialto canner, manufactured at Mt. Pleasant, Texas, by the Rialto Canner Company. This outfit is very simple in construction and operation, and can be purchased for $10.00. There are also other makes that are inexpensive and satisfactory. A single outfit has a capacity of 300 2-pound cans and 200 3-pound cans per day when run to its full capacity. Where it is desired to increase the capacity, two or more outfits can be run on a small furnace, built of either brick or rock. The outfit consists of a specially constructed galvanized iron boiler, made to fit either a No. 7 or No. 8 cooking stove; a basket, or carrier, that fits inside the boiler; can tongs and soldering irons. This is a very simple, yet economical and accurate form of the "open process" method of canning.

The operation of the outfit is very simple and quickly learned, and the principle all the way through is the same as that followed in regular canning establishments.

In canning tomatoes the first step is to scald the fruit just sufficient to loosen the skin so that it can be slipped off. To do this we use a large iron kettle, commonly called a wash pot. The tomatoes are placed in a cheap tin vessel, holding about one-third of a bushel, that has been punched full of small holes, and dipped into the boiling water and allowed to remain about one minute, or until the skin will slip readily. The fruit is then peeled, sliced and filled directly into the empty cans. The cans must be well filled for good results. This finishes the first step. The filled cans are then passed to the second stage of the operation. The tops of the cans wiped dry with a clean cloth, the cap placed on and soldered around the rim. The small hole, or vent, in the center of the cap being left open. Then we are ready for the third step, that of exhausting—expelling the air out of the cans. This is accomplished by submerging the cans in the boiling water (in the boiler) about two-thirds of their length. They are held there until they come to a boil, or for tomatoes, ten minutes. They are then removed, the small hole in the center

of the top closed with solder, and the cans are then completely submerged in the boiling water and boiled, or processed, twenty minutes, which is the fourth, and last, step in the operation.

Then, summed up, the different steps or stages of the complete operation are as follows:

(1) Scalding, peeling and filling; (2) wiping and soldering the cans; (3) exhausting and tipping; (4) processing or cooking.

The scope of the work of home canning is almost unlimited. The canner can be run almost constantly from May until November. Beginning in May with all kinds of berries (especially strawberries and blackberries), we go right on through the summer with vegetables and fruits and during the fall with sweet potatoes. A list of the leading fruits and vegetables that can be successfully put up are as follows: Fruits—Strawberries, blackberries, peaches, plums, pears, apples, figs. Vegetables—Tomatoes, beans, okra, sweet potatoes. Peas and corn cannot be very successfully canned on an outfit of this kind, as they require a higher pressure than the above, and for this purpose the closed kettle is necessary.

Some data concerning the cost of running this outfit was obtained the past season, and our figures are based on the operation of two canners, giving a maximum capacity of 600 2-pound cans (tomatoes) and 400 3-pound cans (peaches or pears) per day. For the debit side we have as follows:

(1)	Picking and delivering fruit, 2 boys at 60 cents per day	$ 1 20
(2)	Scalding, peeling, filling, 2 boys at 60 cents per day	1 20
(3)	Wiping and soldering, 1 man at $1 50 per day	1 50
(4)	Processing, 1 man at $1 50 per day	1 50
(5)	600 2-pound cans, at 2 1-2 cents each	15 00
	Solder for the cans	1 00
	Total cost per day	$21 40

Undoubtedly, the chief value of an outfit of this kind lies in the opportunity afforded of utilizing the surplus that cannot be profitably shipped to market. With tomatoes and peaches, and often with nearly all kinds of vegetables and fruits, the period wherein profitable shipments can be made comes to an end before the crop is exhausted. Therefore, what remains need not be lost, but is turned into a nice profit by canning.

For tomatoes put up the past season, the Station received a net price of 70 cents per dozen, which would give a credit as follows: Six hundred 2-pound cans, or 50 dozen, at 70 cents per dozen, $35.00; leaving a balance of $13.60 per day. For the best grade of peaches put up, we received a net price of $1.75 per dozen. These were put up in a syrup made of high grade sugar. The sugar is poured into warm water until a density of 10 Beaume is reached and the cans are then filled with the syrup instead of clear water. Approximately 1 1-2 pounds of sugar was used to each dozen cans, and the 3-pound, or peach, cans cost 3 cents each. With two outfits the maximum capacity of the 3-pound cans in putting up peaches is 400 cans per day. These are put up with the same labor as given for tomatoes above, and we have as follows:

(1)	For labor	$ 5 40
(2)	400 3-pound cans, at 3 cents each	12 00
(3)	50 pounds sugar, at 6 cents per pound	3 00
	Total	$20 40

On the credit side we have 400 3-pound cans of fancy peaches, or 33 1-3 dozen, at $1.75 per dozen, giving a total of $58.33 1-3.

We also put up a quantity of peaches plain, or in their own juice; these do not require any sugar, but simply clear water. This grade must be sold as pie peaches, and the prices are about $1.00 per dozen.

Pears are put up the same as the peaches, at about the same cost. The prices for the finer grades are the same as for the peaches.

We found that the pears yielded a larger profit than the peaches, other things being equal, as one bushel of pears filled an average of 24 3-pound cans, and one bushel of peaches only 16 3-pound cans.

Our canning work this season was only preliminary, but perfectly successful, and will serve as a basis for future work that should yield very profitable results.